

*Citria lutea* Ström. ab. **clara** ab. nov.

On the forewing there is the usual dark purplish mark on the costa near the base, a dark purplish band running from the costa along the proximal side of the reniform to the inner margin, and another, less dark, running more or less parallel to it on the distal side of the reniform; these two transverse bands are united to one another by dark purple along the costa and to the subapical mark, the space between them being lightly dusted with reddish purple scales; the usual dots or spots on the orange parts of the wing are absent or almost absent. The absence of these spots gives the wing an unusually clear appearance. The hindwing is normal.

Type ♂: Hampton-in-Arden, Warwickshire, 12.viii.1901, bred. (G. W. Wynn coll.) Rothschild coll.

## The Genetics of *Cleora repandata* Linnaeus, ab. *conversaria* Hubner, and ab. *mendeli* Williams

By E. A. COCKAYNE, D.M., F.R.C.P.

In the *Entomologist's Gazette*, 1950, 1, 36, Dr. H. B. Williams suggested that *Cleora repandata* L. ab. *conversaria* Hübner, the grey form, is heterozygous and ab. *mendeli* Williams, the black and white form, is homozygous. The evidence he brought forward in support of this was meagre and he admitted that confirmation was badly needed.

Hearing that Mr. J. O. T. Howard was going to Kinlochewe in July 1949 I asked him to try to get eggs from a female ab. *conversaria* for me. He very kindly sent me a batch of eggs, but owing to a delay in the post they had hatched before I received them, and I was able to find only 24 living larvae. They did well and I sleeved 24 in September, but I bred only seven moths in 1950.

1 *repandata* (♂): 4 *conversaria* (3 ♂♂, 1 ♀): 2 *mendeli* (♀♀).

The male parent was unknown, but the result was very close to a 1:2:1 ratio and in all probability the male parent was a grey heterozygous *conversaria*. Both *mendeli* were extremely beautiful with a purer white and more intense black than any others I have seen. By this good fortune I was saved a year's breeding. I obtained two fertile pairings, the first was *conversaria* ♂ × *conversaria* ♀ and the second *conversaria* ♂ × *mendeli* ♀. The male parent was the same in each case and almost every egg was fertilized. I hoped that these two broods would supply convincing proof that Dr. Williams was right. If so, the first brood would give a 1:2:1 ratio, *repandata*: *conversaria*: *mendeli*, and the second would give a 1:1 ratio, *conversaria*: *mendeli*.

In the autumn about 120 healthy larvae of each brood were placed in separate sleeves side by side. We had a series of torrential thunderstorms in the autumn and then the heavy and almost continuous rains of January, February, and March 1951, and I had little hope that my larvae had survived. Owing to the cold spring the mirabelle plum came into leaf unusually late and I had to wait impatiently until its buds were beginning to burst before bringing my larvae indoors. In spite of the cold the larvae must have started to move as early as in 1950 and found very little to eat. Of the first brood I found 44 living

larvae, but some were weak and soon died and others lingered for weeks without making much progress and in the end they died, too. Of the second and more important brood there were only two survivors and, though both reached the last instar, they made no further progress and died. The dead leaves in both sleeves were sodden and matted together and between them were dozens of little larvae drowned during hibernation. From the pairing *conversaria* ♂ × *conversaria* ♀ I bred only 20 moths.

7 *repandata* (2 ♂♂, 5 ♀♀): 10 *conversaria* (7 ♂♂, 3 ♀♀); 6 *mendeli* (2 ♂♂, 4 ♀♀).

There is a very sharp segregation between the *mendeli* and the *conversaria*, though some of the latter are whiter than others. The *mendeli* are very pure black and white, with no grey speckling. The only crippled specimen is a *mendeli*, which failed to free its front legs from the pupa case. I tried to obtain pairings. I used the same cages as last year in the same part of the same room, sometimes placing the cage in the open window and sometimes inside with the window shut, but the nights were cold and I was unsuccessful.

So far as it goes, this new evidence supports Dr. Williams, but more is still needed.

## *Lasiocampa quercus* Linn. var. *callunae* Palmer in North Devon

By E. BARTON WHITE

In his *Moths of the British Isles*, South states that *L. quercus* var. *callunae* is to be found not uncommonly in the Exmoor district of North Devon. Since boyhood I have taken from time to time in this district specimens all of which appear, more or less, to agree with the description of v. *callunae* given by South and Barrett.

On 25th June 1946 a female from the North emerged and was hung up in the garden. No males arrived during her life of eight days. On the 30th July of the same year two Southern *quercus* emerged in my workshop, the event being discovered by seeing males crawling in under the closed door. The females were placed on a terrace with a south aspect, and during the next two days 122 males were counted and over one hundred were examined. Every one of these showed in some degree one or more of the characteristics of v. *callunae*. All but three had the band turning outwards, and only one had no 'epaulette'. This yellowish patch varied in size from a small group of hairs to a fair-sized patch. In most cases the yellow band was extensively rayed outwards, becoming paler as extended and the 'veins' being covered with dark brown scales. The general ground colour was dark purplish brown rather than chocolate.

The specimen without the epaulette or shoulder patch was very dark. The band was more brown than yellow, narrow and without any raying and was almost absent on the hind wing.

I was unable to make further investigations until this year when, in late June, my supposed v. *callunae* from the North proved to be males, but on 1st August two southern *quercus* emerged and were placed in the same position on the terrace. Whether it was due to the gene-